



This is a repository copy of *Who shapes local climate policy? Unpicking governance arrangements in English and German cities.*

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/121327/>

Version: Accepted Version

Article:

Eckersley, P. orcid.org/0000-0001-9048-8529 (2017) Who shapes local climate policy? Unpicking governance arrangements in English and German cities. *Environmental Politics*. ISSN 0964-4016

<https://doi.org/10.1080/09644016.2017.1380963>

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

Who shapes local climate policy? Unpicking governance arrangements in English and German cities

Peter Eckersley, Department of Politics, University of Sheffield, UK

Email: p.eckersley@sheffield.ac.uk

Abstract

A new framework for analysing subnational policy-making is applied to climate governance in the 'twin towns' of Newcastle upon Tyne and Gelsenkirchen. Low levels of resource interdependence between central and local government in England mean that Newcastle Council has to rely heavily on other horizontal actors to achieve its climate objectives. In contrast, Gelsenkirchen Council receives substantial support from higher tiers of government, which gives it greater control over policymaking within the locality. Greater independence between tiers of government can make it more difficult for subnational bodies to adopt the kind of ambitious policies that may be necessary to combat wicked and/or significant policy challenges such as climate change. Instead, interdependent 'joint-decision' systems, which facilitate mutual support across tiers of government, may be better equipped to ensure that subnational public bodies have the capacity to act appropriately.

Keywords

Climate change; multi-level governance; policy analysis; urban regime; England; Germany

Introduction

Although there is a now a large literature on the role of subnational governments in combating climate change (see Bulkeley 2010 for an overview), scholars have only focused relatively recently on what their approaches may tell us about urban governance (Bulkeley and Betsill 2013; Geels 2014; Miao and Li 2017). Here, I take these recent studies further, drawing on a new theoretical approach to understand local policymaking and applying it to climate governance in one German and one English city. I contrast how the municipalities in these two cities work with other vertical and horizontal actors to increase their capacity to develop and implement their climate change strategies, and identify how other tiers of government and local stakeholders influence urban policymaking.

First, I place the investigation in the context of wider debates about the changing role of the state and how governing actors (including cities) seek to address wicked issues, particularly climate mitigation. This highlights how existing theoretical perspectives on multi-level governance are unable to explain which actors are driving policy-making at the local level; consequently I propose a more holistic framework to help understand these processes.

Following a brief methods section, I apply this framework to contrast how the municipalities of Gelsenkirchen and Newcastle upon Tyne are dealing with climate change, to identify which actors are influencing decision-making in the two cities, and to analyse how their governance arrangements may be changing. Based on this analysis, I then draw wider conclusions about how intergovernmental relations shape local decision-making processes.

Analysing wicked issues at the local level

As policymakers have become increasingly concerned with tackling ‘wicked issues’ (Rittel and Webber 1973), they have sought to work collaboratively across state and non-state organisational boundaries in order to increase their capacity to act. Pollitt (2016) has described climate change as the ‘ultimate wicked issue’; there is widespread recognition that private and voluntary actors at all levels need to play a role in addressing it (Newell 2000; Bulkeley and Betsill 2003; Ferry and Eckersley 2016). Crucially, however, this could mean that power relationships between governing actors may need to change in order to develop more effective policy (Peters and Pierre 2001).

Many previous studies of climate change policy have adopted multi-level governance perspectives to illustrate how different actors both within and across tiers influence decision-making (Lenschow 1999; Auer 2000; Bulkeley 2005; Bulkeley and Betsill 2005; Schreurs 2008). Hooghe and Marks (2003) offer a useful typology of multi-level governance to aid system categorisation: Type I consists of relatively static, multi-purpose jurisdictions within which a single public body has direct responsibility for a range of services; whereas more ad hoc, task-specific organisations are more common in Type II arrangements. Importantly, they did not elaborate on how these different types might shape policy-making; few other scholars have sought to detail them further (Bache 2012). Therefore, although Hooghe and Marks’ typology might help to illustrate the fact that different jurisdictions have adopted contrasting governance arrangements, it does not explain the reasons for these differences or provide the theoretical purchase that could predict the ways in which they may change. Accordingly, the overall idea of ‘(multi-level) governance’ is more useful as an analogy than a theoretical tool. Although it highlights the involvement of numerous stakeholders in making and

implementing policy, it does not help us to understand power relations within these networks and therefore cannot assist us in identifying which actors are most influential in policymaking processes (Smith 2003; Zito 2015; Eckersley 2017a; Marquandt 2017).

Simultaneously, research has highlighted how institutional structures (such as the nature of central-local relations) shape the level of municipal capacity and ultimately influence local climate governance (Bulkeley and Kern 2006; Bai 2007; Romero Lankao 2007; Holgate 2007; Schreurs 2008; Corfee-Morlot et al. 2009; Eckersley 2017b). However, these studies generally focus on the formal competences or the degree of autonomy that municipalities can exercise from a legal perspective: most have not tried to dissect urban governance relationships in order to understand the power dynamics that also influence decision-making (Bulkeley 2010; Shey and Belis 2013). These informal structures are particularly important in ‘Type II’ jurisdictions: they tend to be less hierarchical and more open to interest group participation – and therefore represent fertile ground for a shift in the nature of public and private authority.

Following Rhodes (1981), actors that have the necessary resources to achieve their objectives are likely to wield political power in these contexts. Therefore, if subnational governments do not need to rely heavily on other vertical and horizontal actors, we can expect them to be relatively powerful within governance arrangements and determine their policy objectives fairly autonomously. In contrast, where public bodies need to work closely with societal actors and/or other tiers of government, they will have less ‘power to’ shape policymaking. We might expect to encounter this when public actors try to address wicked issues or in contexts where the state is weak and/or underdeveloped (see Partzsch 2017 for a discussion

about the differences between ‘power to, ‘power with’ and ‘power over’ in environmental politics).

This suggests that a crucial factor influencing the nature of local governance arrangements is the level of internal capacity within the municipality (Pierre 2014), defined as the local *authority’s* ability to achieve its policy objectives without having to rely on other actors for resources (Holgate 2007; Matthews 2012). Critically, we should not confuse capacity with autonomy, which refers to the degree of freedom from central direction. For example, a subnational authority that enjoys significant autonomy may be constrained by a lack of resources, an unclear constitutional status and/or a reliance on unpredictable revenue streams. As such, greater freedom from higher tiers of government might actually reduce capacity within a municipality and mean that it has to rely more on other actors to achieve its objectives. As Homsy and Warner (2015) found in their study of US municipalities, these arrangements could mean that subnational governments have fewer resources to develop effective sustainability policies, when compared to jurisdictions that receive support from other tiers of government. International relations scholars have been familiar with these concepts of state capacity, interdependence and power for several decades (Keohane and Nye 1977; Baldwin 1980), but they may be even more relevant in the context of ‘vertical’ intergovernmental relations because of the role that local authorities often play in policy implementation.

‘Urban regime’ perspectives apply these principles of interdependence to ‘horizontal’ relationships within cities, highlighting how state and non-state actors mobilize and blend resources to achieve policy objectives within a locality (Davies and Trounstone 2012; Davies and Blanco 2017). Stone’s (1989) seminal study of Atlanta found that the city government

had to work extremely closely with private businesses in order to have the ‘power to’ address racial tensions effectively. Central to Stone’s conception of a regime was its relatively stable and institutionalised nature (which survives changes in party political control), its inclusion of powerful state and non-state actors, and its reliance on voluntary co-operation and informal rules. Others have drawn on these principles to characterise local climate governance arrangements in regime terms (Gibbs and Jonas 2000), highlighting that action to tackle environmental problems spans electoral cycles. They stress that key municipal officials often remain in place even when a ruling party or mayor is ousted (Pasquini and Shearing 2014), and that non-state actors seek to continue working with their successors afterwards. However, this literature tends to focus on the definition of a ‘regime’ and whether specific case study cities are ruled by them or not (Mossberger and Stoker 2001), the role of non-profit actors in this particular form of governance (Stokes et al. 2014) or the factors that may lead to its emergence (Thiers et al. 2017). Critics have argued that it fails to explain how policy might change and does not take full account of the vertical intergovernmental context (Rast 2015). Stone himself has acknowledged these weaknesses, partly attributing them to his initial thinking being shaped in the relatively stable context of Atlanta during the post-war ‘redevelopment’ era (Stone 2015).

Underlying this critique is the fact that most regime studies do not focus on the power relationships that operate within urban governance. Consequently, they do not help to identify which actors are influencing decision-making. Although Rhodes’ insight into power dependencies developed from his analysis of vertical governance relationships, it can also provide the theoretical support for a horizontal analysis within localities – whether they qualify as ‘regimes’ or not. Central to his understanding of power within these relationships was identifying which resources each tier of government is dependent upon and who can

provide those resources. These resources are not solely financial: they may also be constitutional or political, shaped by the hierarchical nature of intergovernmental relations, or associated with particular expertise or access to information.

Since state actors need to adopt a more inclusive and holistic approach to address wicked issues, we might expect resource interdependence (along both the ‘vertical’ and ‘horizontal’ dimensions) to be particularly relevant in sectors such as climate change (Torfing 2012). Assuming that decision-makers are rational actors, and therefore seek to adopt the most realistic and effective way of making and implementing policy, we can see how subnational governments will recognise the need to collaborate (and potentially compromise) with external actors in order to achieve their objectives in these circumstances (Sellers and Lidström 2007). With this in mind, we can view the resulting (local) governance arrangements as the consequence of state actors working with other stakeholders to increase their political power (Peters and Pierre 2001; Davies and Trounstone 2012). Furthermore, because state actors in some jurisdictions are likely to have more capacity than their counterparts elsewhere (Sellers 2002), we can apply these principles in comparative analysis.

Rhodes developed his thinking in later publications (Rhodes 1986, 1997), and argued that the degree of interdependence between central and local government in Britain led to the development of cohesive networks. These networks were built on high levels of trust between governing actors, and they made and implemented policy. This led to others categorising networks by their degree of integration (see for example Atkinson and Coleman 1992; Jordan and Schubert 1992) in an attempt to describe the type of relationship between state and non-state actors. Bevir and Rhodes (2010) characterised this debate around networks as the ‘first wave’ of governance thinking, and argued that a second wave, which focused on the notion

of ‘metagovernance’ (Jessop 2002), followed shortly afterwards. Metagovernance perspectives stressed that public officials could steer and direct non-state actors that operate in the ‘shadow of hierarchy’ (Héritier and Lehmkuhl 2011) in order to try and achieve policy goals (Whitehead 2003). However, Bevir and Rhodes pointed out the lack of theoretical underpinning in both network governance and metagovernance, and promoted a third wave of governance instead. This views ‘the state’ in terms of the patterns of rule that shape the behaviour of governing actors, and therefore emphasises the importance of analysing the beliefs, traditions and cultural practices that influence individuals responsible for policymaking (Bever and Rhodes 2010).

In addition to all of this, to explain policymaking processes we further need to understand the power relationships and structures that operate within governance arrangements – not (just) which organisations and individuals belong in them and how they operate (Kooiman 1993). In other words, we need a theory of power to identify which actors are influencing decision-making and why policies might develop in a particular way (Marsh and Rhodes 1992). This returns us to Rhodes’ (1981) previous point about the importance of identifying how resources are distributed between governing actors and how this shapes interdependent power relationships.

At the same time, resource interdependence does not necessarily lead to policy congruence or improved co-ordination across tiers of government. How organisations help each other to achieve their objectives characterises vertical and horizontal governance relationships. Yet, lower tiers of government are not always obliged to implement central policies in return for receiving resources (Capano 2011), particularly if they are in a strong negotiating position. In such situations, central and subnational governments might pursue conflicting agendas, as the

case of climate policy in the US and Australia during the early 2000s illustrated (Bulkeley 2010, Bomberg 2017). Therefore, city and state authorities that have sufficient internal capacity can adopt much more progressive – or regressive – climate policies than their national governments or other horizontal actors may wish. Alternatively, organisations with very low levels of internal capacity might become particularly reliant on external resources and have less control over resultant policymaking. By extension, shifts in the level of internal capacity would affect the nature of power relations within the area, and therefore its policymaking arrangements. In other words, this perspective can address the criticism that Stone's regime approach does not explain change, because it follows that shifts in the distribution of resources between interdependent urban actors might result in different urban governance arrangements.

Rhodes argued that different tiers of government are always interdependent, but suggested that one level may be more dependent on another if the resource exchange between them is asymmetrical. Additionally, however, if neither organisation provides the other with much support, they would actually both be operating relatively independently (see Eckersley 2017a, which provides the theoretical framework for this article). As a result, three types of power dependency relationship may develop – although we should not expect every example of policymaking to fit comfortably within each of these categories.

Figure 1, which I adapt to illustrate the empirical findings, maps power relations in terms of all three potential scenarios (interdependence, dependence and independence) and along both the vertical and horizontal dimensions of governance. The diagrams take the municipality's perspective; therefore, where an organisation is located near the dependence pole, this is because the local authority relies more heavily on other actors than they do on it. By the same

token, the closer a council lies to the independence end of an axis, the more autonomously it operates. If it sits in the middle, it is highly interdependent with other actors along that particular dimension.

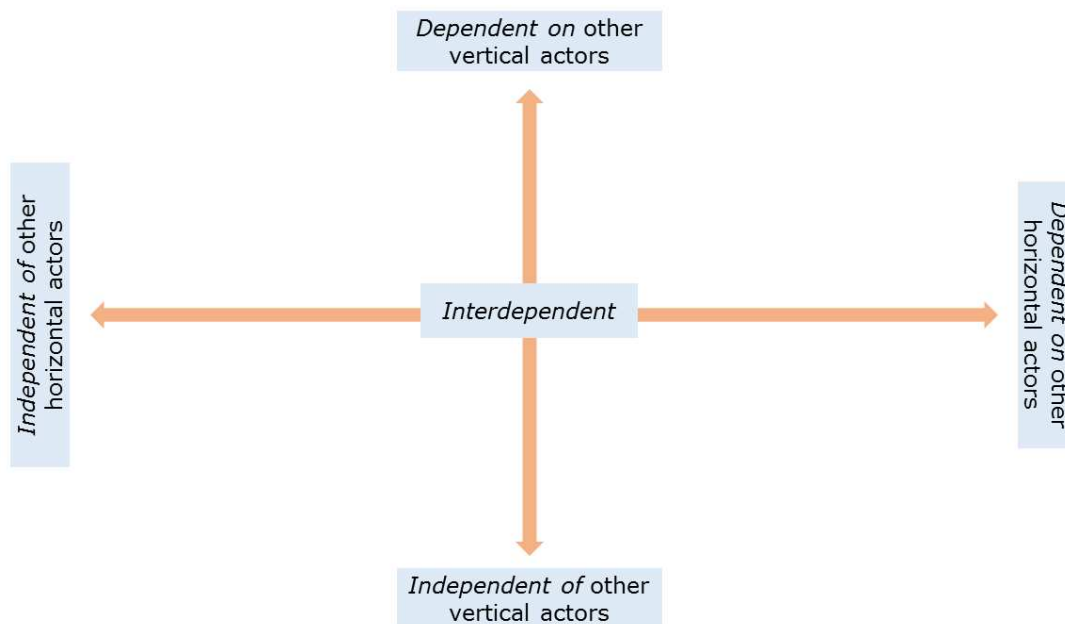


Figure 1: Power dependency relationships along vertical and horizontal dimensions (adapted from Eckersley 2017a)

Furthermore, these relationships can also help explicate the policy approach that a subnational government might adopt. For example, where a municipality is highly interdependent with (or dependent on) other horizontal actors, it may need to adopt a strategy of engagement to persuade them to collaborate in governance arrangements – whereas greater independence might allow it to operate more hierarchically within the city. This may then influence policy outputs, because private actors might exert a level of influence over decision-making commensurate with the resources they provide. Put more simply, we could argue that greater horizontal independence for the municipality might result in more progressive climate policies.

Case selection and method

There are significant differences between the subnational government systems of Germany and England (Norton 1994), and therefore it is particularly useful to compare how these structures influence local power relations and policy-making arrangements in the two countries. For example, until a ‘general power of competence’ came into force through the Localism Act 2011, English councils could only do what was expressly permitted in statute; otherwise they would be acting *ultra vires* (outside the law) and could be prosecuted. Furthermore, English councils have far less power to raise their own revenues: indeed they are much more reliant on central funding than in other large countries in western Europe (Ferry et al. 2015). This contrasts with a long-standing constitutional guarantee of *lokale Selbstverwaltung* (local self-administration) in Germany, which has since the early 1800s enabled municipalities to undertake any activity not prohibited by law and exercise much more control over revenue streams. Similarly, as a unitary state (notwithstanding devolution to Scotland, Wales and Northern Ireland at the end of the 1990s), England’s subnational system of government is substantially different from that of federal Germany. Such contrasts have led some academics to characterise Germany as a ‘Type I’ multi-level governance arrangement (Herrscher and Newman 2002), whereas England is much more akin to Type II (Miller et al. 2000).

Despite these differences, however, the cities of Gelsenkirchen and Newcastle share many common features, facilitating a ‘most similar systems design’ (Przeworski and Teune 1970) and control for a large number of other variables. First, they are very similar in size: Newcastle has 270,000 and Gelsenkirchen 260,000 inhabitants, and both are situated within larger conurbations – the Tyne and Wear region and the Ruhrgebiet in North Rhine-

Westphalia, respectively. Second, they were both strongly associated with heavy industry between the eighteenth and mid-twentieth centuries – coal mining was a major employer in both, Gelsenkirchen had a large steel sector and Newcastle was a big shipbuilding centre. Third, this shared history has left a common legacy of deindustrialisation and economic decline since the late 1960s, which both cities have sought to address by re-branding themselves as forward-looking, sustainable locations to attract investment from the low-carbon sector (Jung et al. 2010; Bulkeley and Betsill 2003). For example, both municipalities set themselves explicit targets to reduce the level of carbon dioxide emissions by over 20% between 2005 and 2020 (Stadt Gelsenkirchen 2011; Newcastle City Council 2010). In summary, the cities have similar socioeconomic ‘starting points’ for their climate protection policies, and also have similar objectives. This study analysed the policy-making arrangements that each municipality adopted in order to achieve these goals.

The research involved 35 semi-structured, anonymised interviews with a total of 38 people in the two cities. Fifteen of the discussions, which covered 19 individuals, were in Gelsenkirchen and the surrounding area, and the remaining 20 interviews involved 19 individuals in Newcastle. I conducted the Newcastle fieldwork between January 2012 and March 2016, and the Gelsenkirchen interviews between June and September 2013. Thirty of the 34 conversations were face-to-face, two by telephone, and one in each case study city by email. The interviewees worked in a range of council departments, including environment, planning, economic development, corporate procurement and policy, and included some very senior managers in both municipalities. I also spoke to staff in a number of other public bodies, as well as representatives from the local voluntary sector in each city. In order to identify the nature of resource dependency relationships, I asked interviewees about the funding they received to support climate initiatives, staffing levels, sources of legal and

practical advice, the frequency, content and nature of meetings with other policy actors, any requirements for consulting on decisions, and their overall views on how policies evolved. I also triangulated the interview data with a range of other sources, including academic analyses, statistics on carbon emissions, media coverage, grey literature, minutes from meetings, policy documents and legislation. Significant contrasts in the nature of climate policy-making in Gelsenkirchen and Newcastle were revealed.

Research findings

Climate change policy-making in Gelsenkirchen

Vertical governance structures

Gelsenkirchen Council receives substantial support from higher tiers of government to help with climate policy, yet it also enjoys significant autonomy in decision-making. The municipality received federal government funding to cover 90% of the budget for implementing its climate protection strategy, the Klimaschutzkonzept (interview 21), but can determine the nature, timing and type of projects that it wishes to undertake (interview 14). Nevertheless, my fieldwork revealed that public bodies at all levels cooperated closely in order to achieve common policy goals, in line with the notion of Politikverflechtung (usually translated as ‘cooperative federalism’, Scharpf et al. 1976). Politikverflechtung in the climate and energy sectors has been further encouraged by the Energiewende narrative, which stresses how Germany needs to move away from its reliance on fossil fuels and nuclear power, and towards renewable sources.

Indeed, a number of interviewees in Gelsenkirchen cited both the *Energiewende* and *Politikverflechtung* as pervading influences over climate protection policy in the city (interviews 16, 19 and 21). In line with previous studies (Moss et al. 2015; Huß 2014), these individuals stressed how a culture of mutual support and collaboration (both within and between public bodies) made it easier to coordinate activities and implement policy. Similarly, interviewees in the regional *Bezirk* (an arm of the *Land* government) saw their role as being primarily to help municipalities to bid for funding and deliver local policy objectives – rather than stipulating what the money should be spent on, or auditing specific projects. As such, their relationship with local government is more akin to that of consultant-client than master-servant (interview 26). This trend towards even greater interdependence between tiers of government has provided Gelsenkirchen Council with more capacity and ‘power to’ achieve its policy objectives.

Horizontal governance structures

German municipalities have retained a greater degree of control over local utilities and other public services than their English counterparts (Bulkeley and Kern 2006; Becker et al. 2015). This suggests that Gelsenkirchen Council would have a stronger position in local governance arrangements than its counterpart in Newcastle, because it has direct influence over a broader range of public services and horizontal actors. Indeed, its strategy of reimagining the city as a centre for solar energy during the 1990s and 2000s, together with the ambitious initiatives that flowed from this vision, highlights how the council sought to act largely independently of other horizontal actors in trying to re-orient the city’s economic and political outlook around environmental protection (Jung et al. 2010).

Similarly, the municipality took a very strong leadership role in developing the city's climate protection strategy (the Klimaschutzkonzept). An advisory body of municipal officers and politicians, together with some managers from the local energy supplier ELE (in which the council also holds a 16% stake), drafted this document: other businesses and voluntary groups in the city were not involved in its preparation (interviews 14 and 21). Some council staff have since engaged with other local stakeholders to try and persuade them to play their part in achieving the planned carbon emissions reductions, for example by encouraging firms to reduce their reliance on road transport. However, it is notable that this only happened after the council formally adopted the strategy, thereby highlighting the extent to which it operated largely independently of other local actors in policy formulation.

Interestingly, neither public officials nor other stakeholders in Gelsenkirchen questioned the municipality's leadership role and authority within the city. This highlights the fact that the authority had the capacity to exert very strong influence over other local actors, and could employ more traditional hierarchical approaches to policy-making – something that one interviewee argued also applied to other German councils:

‘Municipalities in Germany... do not have to do much with civil society. They don't have to work with other actors – at least at the moment’ (interview 27).

Even in areas where the council has asked non-state actors in the city to contribute towards Gelsenkirchen's climate objectives (such as retrofitting private buildings and encouraging more sustainable commuting), these organisations have largely been happy to do the municipality's bidding (Eckersley 2017b). Interviewees attributed this willingness to the authority's dominant position as the city's democratically elected body, which meant that

other actors felt compelled to respect its policies (interviews 14 and 21). Furthermore, because German councils are embedded into the constitutional framework and receive support from other tiers of government, these legal and political resources enhance the position of municipalities within their localities. Indeed, the overall impression from conducting fieldwork in both countries was that German councils are held in higher esteem than their English counterparts.

However, Gelsenkirchen Council no longer has complete control over all local public services and utilities through the city's Stadtwerke, after it sold off or outsourced various functions in the 1990s (interview 24). Consequently, it operates within a more fragmented institutional arrangement than was previously the case, which means that it needs to liaise with external organisations on issues related to climate protection. Moreover, the 'wicked' nature of climate change has meant that the council cannot rely solely on public bodies to make and implement policy. Slowly, but surely, Gelsenkirchen Council has sought to involve other local actors in climate protection, largely because decision-makers have acknowledged the necessity of persuading residents and businesses to change their behaviour in order to reduce carbon emissions (interviews 14 and 15). Indeed, the authority's Klimaschutzkonzept notes how the municipality is only responsible for 2% of the city's CO₂ emissions, and therefore private households and businesses need to make a significant contribution towards achieving the city's climate policy objectives. Officers in the municipality recognise that they have to adopt an 'enabling' mode of governance (Bulkeley and Kern 2006) to achieve this, and have sought to operate more interdependently by persuading local actors to engage with climate protection initiatives, rather than introducing binding regulations.

For example, the council has launched marketing campaigns to inform households and businesses of the potential benefits from feed-in tariffs if they install PV panels (interviews 19 and 24). In 2012 and 2014 it organised climate conferences and invited key actors from across the city to share ideas on carbon reduction (interview 20). It has also introduced other initiatives to persuade stakeholders within Gelsenkirchen to change their behaviour, including: encouraging cycling through a rent-a-bike initiative; a more coordinated campaign to encourage people to use public transport and car-sharing schemes; real-time updates to bus, train and tram timetables; and engagement with private sector landlords to improve the energy efficiency of their properties (Stadt Gelsenkirchen 2011).

This greater reliance on ‘new’ environmental policy instruments (Jordan et al. 2005) and horizontal governance tools shows how the municipality recognises that it needs to work with other societal actors in order to have the capacity to achieve its climate objectives (interview 20). These capacity constraints are partly financial (for example, this was certainly the key driver behind privatising the Stadtwerke), partly due to the fact that pre-existing state institutions were unable to respond effectively to industrial decline, and partly a function of the fact that ‘wicked’ issues need responses from both state and societal actors. Nonetheless, despite the trend towards more horizontal interdependence in Gelsenkirchen, the council is still in a stronger and more independent position than its English counterpart vis à vis other local actors (see Figure 2).

Climate change policy-making in Newcastle

Vertical governance structures

Recent changes in central-local relations in England have meant that local authorities are operating increasingly independently of other vertical actors (Lowndes and Pratchett 2012; Lowndes and Gardner 2016). These changes include the Localism Act 2011, which heralded the abolition of centralised performance management frameworks and the introduction of a ‘general power of competence’, as well as significant reductions in grant funding. The developments have had significant implications for local governance and climate protection, particularly in Newcastle. For example, the level of central grants to Newcastle Council fell by £289 per head between 2010 and 2015 – more than double the English average – at a time when demographic changes were increasing the demands on local public services (Kelly 2015). Although some ministerial funding streams for local climate mitigation did survive initially (such as money to finance the installation of charging points for electric vehicles), there are very few other central government revenue sources available (interviews 8 and 12). Furthermore, central government no longer provides much advice to councils on environmental priorities (interview 36), and has significantly reduced the number of sustainability indicators and targets against which municipalities must monitor their performance. This has resulted in less interaction between tiers, with fewer opportunities to share information and provide reciprocal support for policy-making and implementation: in short, Newcastle now operates even more independently of central resources than was previously the case. In addition, unlike the *Energiewende* in Germany, there is no clear narrative around which governance actors can coalesce that also relates to those based outside the environmental policy sector. Therefore, even though different tiers of government agree

about the need to combat climate change and reduce carbon emissions, there is a lack of leadership, coordination and direction. As we shall see, the changing nature of this central-local relationship played a key role in shaping the city's horizontal governance arrangements, due to its impact on municipal capacity.

Horizontal governance structures

Newcastle has sought to work much more interdependently with other horizontal actors than has Gelsenkirchen. For example, although council officers drafted the city's original climate change strategy document, they incorporated ideas and input from other organisations in the city, including universities, hospitals, the police, the transport authority and some community groups. The drafting process also included formal consultations, through which senior officers considered whether ideas from the public could be included in the final document (interview 31). This approach contrasts sharply with that of Gelsenkirchen, where the only contributors to its Klimaschutzkonzept were either employees of the municipality or the energy supplier ELE – other actors did not even get to see the plan until after its publication. Additionally, as part of Newcastle's overall strategy of involving societal groups in policymaking, the council organised open 'Green Cabinet' meetings, involving businesses, voluntary groups, academics and citizens, who debate and contribute towards the city's environmental strategy. It has also provided strong support to grassroots projects such as 'Greening Wingrove', a community co-operative aimed at encouraging residents to live more sustainably and improve their local environment (interview 31; Davoudi and Brooks 2016).

Leading politicians in the city's Labour group were keen to develop a broad societal coalition for policymaking and implementation before taking office in 2011. Nonetheless, the financial

austerity that has affected all English councils (but particularly northern urban municipalities such as Newcastle) accelerated this process:

‘This would have been core Council policy, whatever the financial challenges. It’s something that the Leader and the Cabinet believe in very much... And the budget challenges mean that we simply don’t have a choice – this isn’t something that we’d like to do, this is something that we must do if we’re going to preserve public services, because the Council simply won’t have the money to do all of those things’ (interview 30).

These political preferences reflected a belief that greater horizontal interdependence would make it easier for the municipality to achieve its objectives, because pooling resources with other organisations would increase the city’s capacity to implement policy. Crucially, however, the increasing level of resource independence along the vertical dimension played a key role in accelerating this strategy. For example, central government funding cuts have led to the municipality reducing its spending on public parks by 90% between 2010 and 2017, and the authority has responded by seeking to transfer responsibilities for their operation and maintenance to a charitable trust (Newcastle City Council 2017).

In particular, the council’s relationship with Newcastle University has proved crucial in developing and implementing the city’s sustainable development strategy. The two organisations collaborated closely together in the redevelopment of a large brownfield site in the city centre (Science Central), which will feature a number of state of the art environmental features (interview 11 and 31) and forms a core part of this strategy. Notably, the university – not the council – has taken the lead in ensuring that Science Central acts a

beacon of sustainability. Staff within the municipality are comfortable with this arrangement, given that the academic institution has significantly more resources and capacity to integrate climate change considerations into the overall design of the development (interview 6). More pertinently, the authority recognised that it would be unable to manage the project without the heavy involvement of other local actors. This was particularly the case from 2010 onwards, when the UK Government abolished the network of regional development agencies that provided councils with funding and advice on regeneration projects and began to reduce the level of central grants to municipalities (interviews 6 and 11). As this suggests, Newcastle's increasing degree of vertical independence from central government led to it becoming more dependent on other local actors to achieve these policy objectives.

Crucially, however, it means that the university (rather than the council) shapes how sustainability priorities are operationalised on the Science Central site, with the result that it has been designed primarily as a 'living laboratory' that produces data for scientific research, rather than a democratically-led project to support policy goals on low-carbon lifestyles and social inclusion (interview 13). Horizontal power relationships within Newcastle mean that such initiatives are more closely aligned with the university's interests, rather than those of the wider local community. By becoming increasingly dependent on the university to develop and implement the city's sustainability and climate change strategy, the council has ceded some control over determining and implementing policy.

Discussion and conclusions

Overall, therefore, Newcastle Council works far more interdependently (and increasingly dependently) with other local actors when compared to Gelsenkirchen. This is primarily due

to the fact that it receives fewer resources from the UK government and therefore has less capacity to act independently and exert hierarchical authority over other societal actors. In contrast, the Energiewende narrative and the tradition of Politikverflechtung ensure that different vertical actors provide mutual support and coordinate on policymaking and implementation in Gelsenkirchen, resulting in a municipality that has more capacity to act independently of other organisations in the locality. Figure 2 illustrates these vertical and horizontal relationships in both cities, and also highlights the fact that they are changing.

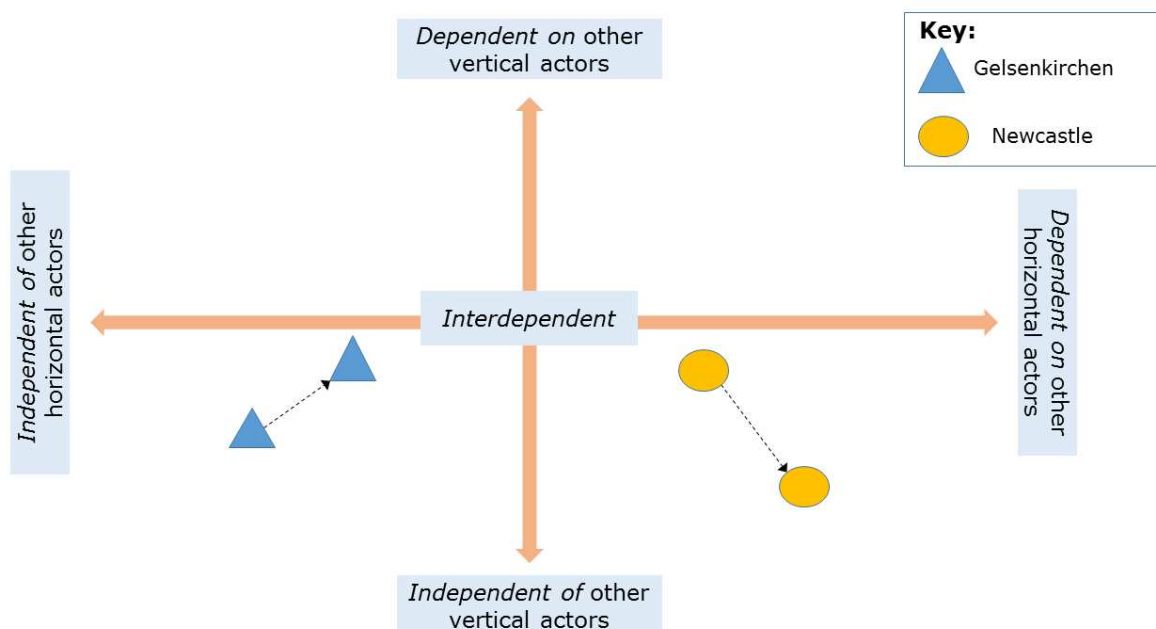


Figure 2: Trends in vertical and horizontal power dependencies for climate policymaking in Gelsenkirchen and Newcastle

Along the horizontal dimension, Newcastle Council's recent decisions to allocate an increasing number of public functions to external organisations (such as the university and Greening Wingrove) mean that its climate change strategy is increasingly dependent on other actors within the city. Gelsenkirchen Council operates more independently along the horizontal dimension than its English counterpart. This is because it can exercise more

control over local public services, and – crucially – because of the support it receives from higher tiers of government. Nonetheless, the German municipality has begun to realise that the actions of organisations outside the local authority will play a key role in the success of its climate protection initiatives, and this has led to it working slightly more interdependently with other actors in the city than previously. Both cities are shifting away from horizontal independence (albeit from different starting points), as they try to persuade societal actors to support council objectives, seek out additional resources, and facilitate behavioural change amongst local businesses and citizens. These changes were necessary to address the complex and unprecedented challenge of climate change, which means that the state has to collaborate much more with other societal actors.

Nevertheless, robust interdependent relationships with higher tiers of government allow Gelsenkirchen Council to continue enjoying a stronger position within the city than Newcastle. This provides it with additional capacity, which enables it to operate more independently of other local actors and pursue ambitious climate policies. For its part, government policies have since 2010 made Newcastle Council increasingly independent of the centre and weakened municipal capacity to achieve policy objectives. Alongside a more fragmented local state, this has led municipal decision-makers to try to mobilise a broad coalition of local stakeholders on the issue of climate change in order to address it more effectively. This shows how greater vertical independence has resulted in more horizontal dependence, because the council does not have the capacity to act alone. Critically, since this means that Newcastle Council has less control over decision-making than its German counterpart, its policies may be less congruent with the municipality's core objectives. As the Science Central development illustrated, higher levels of horizontal dependency can still lead to ambitious sustainability initiatives, but they are more likely to serve the interests of those

local actors who play an instrumental role in their conception and delivery, rather than those of the wider city. This shows how the resources, capacity and institutional contexts within which these municipalities operate can shape the nature of local governance arrangements and – ultimately – policy outputs.

These findings have significant implications for proponents of ‘localism’, since they suggest that greater vertical independence for municipal governments might strengthen societal actors at the expense of the local state. Such an eventuality could mean that policies reflect the private interests of powerful non-state actors, rather than the priorities of democratically-elected councillors and mayors. By weakening the capacity of municipalities, they might also preclude councils from adopting the kind of ambitious policy instruments that may be necessary to address climate change effectively, because officials could take the view that they might not be deliverable in the face of strong opposition from non-state actors (Meadowcroft 2009). In contrast, ‘joint-decision’ systems are more likely to strengthen the hand of the state in governance arrangements, despite some critics arguing that they result in bureaucratic and sub-optimal decision-making (Scharpf 1988).

Although previous studies have recognised that governance ‘happens’ along both vertical and horizontal dimensions and involves a range of different actors, they have not necessarily helped us to identify the extent to which individual actors influence decisions. Similarly, critics of the regime perspective have argued that it does not help to explain policy change or take sufficient account of the importance of vertical intergovernmental relations. I have addressed both of these issues, by stressing that examining resource (inter)dependencies across both vertical and horizontal dimensions can unpick power relationships within governance arrangements, and thereby arrive at a better understanding of policymaking

processes. Furthermore, I have highlighted how the level and nature of central government support for subnational bodies play a key role in shaping how municipalities work with other local actors, and how these interactions can ultimately influence policy outputs.

Acknowledgements

This work was supported by the UK Economic and Social Research Council under Grant ES/J500082/1 and the Deutsche Akademische Austausch Dienst under Grant A1371899. I would also like to thank Anthony Zito for his support and advice during the production of this work, and the two anonymous reviewers for their helpful comments.

References

- Atkinson, M. M. and W. D. Coleman. 1992. "Policy Networks, Policy Communities and the Problems of Governance." *Governance* 5 (2): 154-180.
- Auer, M. R. 2000. "Who Participates in Global Environmental Governance? Partial Answers from International Relations Theory." *Policy Sciences* 33 (2): 155-180.
- Bache, I. 2012. "Multi-level Governance in the European Union." In *The Oxford Handbook of Governance*, edited by D. Levi-Faur, 628-641. Oxford: Oxford University Press.
- Bai, X. 2007. "Integrating Global Environmental Concerns into Urban Management: The Scale and Readiness Arguments." *Journal of Industrial Ecology* 11 (2): 15-29.
- Baldwin, D. A. 1980. "Interdependence and Power: A Conceptual Analysis." *International Organization* 34 (4): 471-506.

- Becker, S., R. Beveridge, and M. Naumann. 2015. "Remunicipalization in German Cities: Contesting Neo-liberalism and Reimagining Urban Governance?" *Space and Polity* 19 (1): 76-90.
- Bevir, M., and R. A. W. Rhodes. 2010. *The State as Cultural Practice*. Oxford: Oxford University Press.
- Bomberg, E. 2017. "Environmental Politics in the Trump Era: An Early Assessment." *Environmental Politics* 26 (5): 956-963.
- Bulkeley, H. 2005. "Reconfiguring Environmental Governance: Towards a Politics of Scales and Networks." *Political Geography* 24 (8): 875-902.
- Bulkeley, H. 2010. "Cities and the Governing of Climate Change." *Annual Review of Environment and Resources* 35: 229-253.
- Bulkeley, H., and M. M. Betsill. 2003. *Cities and Climate Change: Urban Sustainability and Global Environmental Governance*. New York: Routledge.
- Bulkeley, H., and M. M. Betsill. 2005. "Rethinking Sustainable Cities: Multilevel Governance and the 'Urban' Politics of Climate Change." *Environmental Politics* 14 (1): 42-63.
- Bulkeley, H., and M. M. Betsill. 2013. "Revisiting the Urban Politics of Climate Change." *Environmental Politics* 2 (1): 136-154.
- Bulkeley, H., and K. Kern. 2006. "Local Government and the Governing of Climate Change in Germany and the UK." *Urban Studies* 43 (12): 2237-2259.
- Capano, G. 2011. "Government Continues to Do Its Job: A Comparative Study of Governance Shifts in the Higher Education Sector." *Public Administration* 89 (4): 1622-1642.
- Corfee-Morlot, J., L. Kamal-Chaoui, M. G. Donovan, I. Cochran, A. Robert, and P-J. Teasdale. 2009. *Cities, Climate Change and Multilevel Governance*. OECD

Environmental Working Papers 14. Accessed March 24 2017.

<https://www.oecd.org/governance/regional-policy/44232263.pdf>

- Davies, J. S., and J. Trounstein. 2012. "Urban Politics and the New Institutionalism." In *The Oxford Handbook of Urban Politics*, edited by K. Mossberger, S. E. Clarke and P. John, 51-70. New York: Oxford University Press.
- Davies, J. S., and I. Blanco. 2017. "Austerity Urbanism: Patterns of Neo-liberalisation and Resistance in Six Cities of Spain and the UK." *Environment and Planning A* 49 (7): 1517-1536.
- Davoudi S., and E. Brooks. 2016. "Urban Greenspace and Environmental Justice Claims." In *Justice and Fairness in the City: A Multi-Disciplinary Approach to 'Ordinary' Cities*, edited by S. Davoudi and D. Bell, 25–48. Bristol: Policy Press.
- Eckersley, P. 2017a. "A New Framework for Understanding Subnational Policy-Making and Local Choice." *Policy Studies* 38 (1): 76-90.
- Eckersley, P. 2017b. "Cities and Climate Change: How Historical Legacies Shape Policy-Making in English and German Municipalities." *Politics* 37 (2): 151-166.
- Ferry, L., and P. Eckersley. 2016. "Debate: Climate Change and COP21 in Paris – Addressing the Ultimate Wicked Issue." *Public Money and Management* 36 (4): 241-242.
- Ferry, L., P. Eckersley, and W. van Dooren. 2015. "Local Taxation and Spending as a Share of GDP in Large Western European Countries." *Environment and Planning A* 47 (9): 1779-1880.
- Geels, F. W. 2014. "Regime Resistance against Low-carbon Transitions: Introducing Politics and Power into the Multi-level Perspective." *Theory, Culture & Society* 31 (5): 21–40.
- Gibbs, D. and A. E. G. Jonas. 2000. "Governance and Regulation in Local Environmental Policy: The Utility of a Regime Approach." *Geoforum* 31 (3): 299-313.

- Héritier, A. and D. Lehmkuhl. 2011. "Governing in the Shadow of Hierarchy: New Modes of Governance in Regulation." In *New modes of governance in Europe: Governing in the shadow of hierarchy* edited by A. Héritier and M. Rhodes, 48-74. Basingstoke: Macmillan.
- Herrschel, T., and P. Newman. 2002. *Governance of Europe's City Regions: Planning, Policy & Politics*. London: Routledge.
- Holgate, C. 2007. "Factors and Actors in Climate Change Mitigation: A Tale of Two South African Cities." *Local Environment* 12 (5): 471-484.
- Hooghe, L., and G. Marks. 2003. "Unraveling the Central State, But How? Types of Multi-level Governance." *American Political Science Review* 97 (2): 233-243.
- Homsy, G. C., and M. E. Warner. 2015. "Cities and Sustainability: Polycentric Action and Multilevel Governance." *Urban Affairs Review* 51 (1): 46-73.
- Huß, C. 2014. "Energy Transition by Conviction or by Surprise? Environmental Policy from 2009 to 2013." *German Politics* 23 (4): 430-445.
- Jessop, B. 2002. "Governance and Meta-governance in the Face of Complexity: On the 'Roles of Requisite Variety, Reflexive Observation and Romantic Irony in Participatory Governance.'" In *Participatory Governance in a Multi-Level Context: Concepts and Experience*, edited by H. Heinelt, P. Getimis, G. Kafkalas, R. Smith and E. Swyngedouw, 33-58. Opladen: Leske & Budrich.
- Jordan, A., R. K. W. Wurzel, and A. R. Zito. 2005. "The Rise of 'New' Policy Instruments in Comparative Perspective: Has Governance Eclipsed Government?" *Political Studies* 53 (3): 477-496.
- Jordan, G., and K. Schubert. 1992. "A Preliminary Ordering of Policy Network Labels." *European Journal of Political Research* 21 (1): 7-27.

- Jung, W., A. Hardes, and W. Schröder. 2010. "From Industrial Area to Solar Area - The Redevelopment of Brownfields and Old Building Stock with Clean Energies." In *Local Governments and Climate Change: Sustainable Energy Planning and Implementation in Small and Medium Sized Communities*, edited by M. van Staden and F. Musco, 275-291. Heidelberg: Springer.
- Keohane, R. O., and J. S. Nye. 1977. *Power and Interdependence: World Politics in Transition*. Boston: Little, Brown and Company.
- Kelly, M. 2015. "Heat Maps Reveal how North East Has Suffered Due to Funding Cuts." *Evening Chronicle*, January 12. <http://www.chroniclelive.co.uk/news/north-east-news/heat-maps-reveal-how-north-8421641>.
- Kooiman, J. 1993. *Modern Governance: New Government - Society Interactions*. London: Sage.
- Lenschow, A. 1999. "Transformation in European Environmental Governance." In *The Transformation of Governance in the European Union*, edited by B. Kohler-Koch and R. Eising, 37-58. London: Routledge.
- Lowndes, V., and A. Gardner. 2016. "Local Governance under the Conservatives: Superausterity and the 'Smarter State'." *Local Government Studies* 42 (3): 357-375.
- Lowndes, V., and L. Pratchett. 2012. "Local Governance under the Coalition Government: Austerity, Localism and the 'Big Society'." *Local Government Studies* 38 (1): 21-40.
- Marquandt, J. 2017. "Central-local Relations and Renewable Energy Policy Implementation in a Developing Country." *Environmental Policy and Governance* 27 (3): 229-243.
- Marsh, D., and R. A. W. Rhodes. 1992. "Policy Communities and Issue Networks: Beyond Typology." In *Policy Networks in British Government*, edited by D. Marsh and R. A. W. Rhodes, 249-268. Oxford: Clarendon Press.

- Matthews, F. 2012. "Governance and State Capacity. In *The Oxford Handbook of Governance*, edited by D. Levi-Faur, 281-293. Oxford: Oxford University Press.
- Meadowcroft, J. 2009. "Climate Change Governance: Background Paper to the 2010 World Development Report." World Bank Policy Research Paper 4971. Accessed March 24 2017. <http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-4941>
- Miao, B., and Y. V. Li. 2017. "Local Climate Governance under the Shadow of Hierarchy: Evidence from China's Yangtze River Delta." *Urban Policy and Research* 35 (3): 298-311.
- Miller, W. L., M. Dickson, and G. Stoker. 2000. *Models of Local Governance: Public Opinion and Political Theory in Britain*. Basingstoke: Palgrave.
- Moss, T., S. Becker, and M. Naumann. 2015. "Whose Energy Transition Is It, Anyway? Organisation and Ownership of the Energiewende in Villages, Cities and Regions." *Local Environment: The International Journal of Justice and Sustainability* 20 (12): 1547-1563.
- Mossberger, K., and G. Stoker. 2001. "The Evolution of Urban Regime Theory: The Challenge of Conceptualization." *Urban Affairs Review* 36 (6): 810-835.
- Newcastle City Council. 2010. *Citywide Climate Change Strategy & Action Plan 2010 - 2020: Delivering Newcastle's Sustainable Community Strategy*. Newcastle City Council. Accessed November 4 2016. https://www.newcastle.gov.uk/sites/default/files/wwwfileroot/environment-and-waste/citywide_climate_change_strategy_action_plan_october_2010_final.pdf
- Newcastle City Council. 2017. *Newcastle Residents Invited to Give Views on City's Parks and Allotments*. Newcastle City Council. Accessed March 24 2017. <https://www.newcastle.gov.uk/news-story/newcastle-residents-invited-give-views-citys-parks-and-allotments>

- Newell, P. 2000. *Climate for Change: Non-State Actors and the Global Politics of the Greenhouse*. Cambridge: Cambridge University Press.
- Norton, A. 1994. *International Handbook of Local and Regional Government: A Comparative Analysis of Advanced Democracies*. Aldershot: Edward Elgar.
- Partzsch, L. 2017. “‘Power with’ and ‘power to’ in environmental politics and the transition to sustainability.” *Environmental Politics* 26 (2): 193-211.
- Pasquini, L., and C. Shearing. 2014. “Municipalities, Politics, and Climate Change: An Example of the Process of Institutionalizing an Environmental Agenda within Local Government.” *Journal of Environment & Development* 23 (2): 271–296.
- Peters, B. G., and J. Pierre. 2001. “Developments in Intergovernmental Relations: Towards Multi-level Governance.” *Policy & Politics* 29 (2): 131-135.
- Pierre, J. 2014. “Can Urban Regimes Travel in Time and Space? Urban Regime Theory, Urban Governance Theory and Comparative Urban Politics.” *Urban Affairs Review* 50 (6): 864-889.
- Pollitt, C. 2016. “Debate: Climate Change - The Ultimate Wicked Issue.” *Public Money and Management* 36 (1): 78-80.
- Przeworski, A., and H. Teune. 1970. *The Logic of Comparative Social Enquiry*. London: John Wiley & Sons.
- Rast, J. 2015. “Urban Regime Theory and the Problem of Change.” *Urban Affairs Review* 51 (1): 138-149.
- Rhodes, R. A. W. 1981. *Control and power in central-local relations*. Westmead: Gower.
- Rhodes, R. A. W. 1986. *The National World of Local Government*. London: Allen and Unwin.
- Rhodes, R. A. W., 1997. *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability*. Bristol, Open University Press.

- Rittel, H. W. J., and M. M. Webber. 1973. "Dilemmas in a General Theory of Planning." *Policy Sciences* 4 (2): 155–169.
- Romero Lankao, P. 2007. "How Do Local Governments in Mexico City Manage Global Warming?" *Local Environment* 12 (5): 513-535.
- Scharpf, F. W. 1988. "The Joint-Decision Trap: Lessons from German Federalism and European Integration." *Public Administration* 66 (3): 239–278.
- Scharpf, F. W., B. Reissert, and F. Schnabel. eds. 1976. *Politikverflechtung: Theorie und Empirie des kooperativen Föderalismus in der Bundesrepublik*, Kronberg: Scriptor.
- Schreurs, M. A. 2008. From the Bottom Up: Local and Subnational Climate Change Politics. *Journal of Environment and Development* 17 (4): 343-355.
- Sellers, J. M. 2002. "The Nation-State and Urban Governance: Toward Multilevel Analysis." *Urban Affairs Review* 37 (5): 611-641.
- Sellers, J. M., and A. Lidström. 2007. "Decentralization, Local Government, and the Welfare State." *Governance* 20 (4): 609–632.
- Shey, J. E., and D. Belis. 2013. "Building a Municipal Food Policy Regime in Minneapolis: Implications for Urban Climate Governance." *Environment and Planning C: Government and Policy* 31 (5): 893 – 910.
- Smith, A. 2003. "Multi-level Governance: What It Is and How It Can Be Studied." In *Handbook of Public Administration*, edited by B. G. Peters and J. Pierre, 377-386. London: Sage.
- Stadt Gelsenkirchen. 2011. *Integriertes Klimaschutzkonzept Abschlussbericht*. Stadt Gelsenkirchen. Accessed November 4 2016.
https://www.gelsenkirchen.de/de/infrastruktur/umwelt/klima/klimaschutz/klimaschutzprojekte/klimaschutzkonzepte/doc/iksk_ge_eb_2011_05_18.pdf

- Stokes, R. J., Mandarano, L., and R. Dilworth. 2014. "Community-based Organisations in City Environmental Policy Regimes: Lessons from Philadelphia." *Local Environment* 19 (4): 402-416.
- Stone, C. N. 1989. *Regime Politics: Governing Atlanta, 1946-1988*. Lawrence, KS: University Press of Kansas.
- Stone, C. N. 2015. "Reflections on Regime Politics: From Governing Coalition to Urban Political Order." *Urban Affairs Review* 51 (1): 101-137.
- Thiers, P., M. Stephan, S. Gordon, and A. Walker. 2017. "Metropolitan Eco-regimes and Differing State Policy Environments: Comparing Environmental Governance in the Portland–Vancouver Metropolitan Area." *Urban Affairs Review*. Advance online publication. doi: 10.1177/1078087417693321.
- Torring, J. 2012. "Governance Networks." In *The Oxford Handbook of Governance*, edited by D. Levi-Faur, 99-112. Oxford: Oxford University Press.
- Whitehead, M. 2003. "'In the Shadow of Hierarchy': Meta-governance, Policy Reform and Urban Regeneration in the West Midlands." *Area* 35 (1): 6-14.
- Zito, A. R. 2015. "Multi-level Governance, EU Public Policy and the Evasive Dependent Variable." In *Multi-Level Governance: the Missing Linkages*, edited by E. Ongaro, 15-39. Bingley: Emerald.

Appendix: Details of fieldwork interviews

Date	Reference number	Method	Number of interviewee(s)	Organisation
06/01/2012	1	Face-to-face	2	Newcastle City Council
16/02/2012	2	Face-to-face	1	Newcastle City Council
05/03/2012	3	Face-to-face	1	Newcastle City Council
11/06/2012	4	Face-to-face	1	Your Homes Newcastle
23/07/2012	5	Face-to-face	1	Newcastle City Council
15/10/2012	6	Face-to-face	1	Newcastle City Council
09/11/2012	7	Face-to-face	1	Newcastle City Council
09/11/2012	8	Face-to-face	1	Newcastle City Council
16/11/2012	9	Face-to-face	2	Newcastle City Council
27/02/2013	10	Face-to-face	1	Newcastle City Council
28/02/2013	11	Face-to-face	1	Newcastle Science Central
08/04/2013	12	Face-to-face	1	Newcastle City Council
19/06/2013	13	Face-to-face	1	Newcastle University
27/06/2013	14	Face-to-face	1	Gelsenkirchen Council
27/06/2013	15	Face-to-face	1	Gelsenkirchen Council
27/06/2013	16	Face-to-face	1	Gelsenkirchen Council
09/07/2013	17	Face-to-face	2	Gelsenkirchen Council
15/07/2013	18	Face-to-face	2	Gelsenkirchen Council
16/07/2013	19	Face-to-face	1	Gelsenkirchen Council
16/07/2013	20	Face-to-face	2	Gelsenkirchen Council and Solarstadt Gelsenkirchen
18/07/2013	21	Face-to-face	3	Gelsenkirchen Council
18/07/2013	22	Face-to-face	2	Gelsenkirchen Council
19/07/2013	23	Face-to-face	1	Gelsenkirchen Council

19/07/2013	24	Face-to-face	1	Gelsenkirchen Council
22/07/2013	25	Face-to-face	1	Gelsenkirchen Council
25/07/2013	26	Telephone	1	GMP Architects
25/07/2013	27	Face-to-face	2	Münster Bezirksregierung
22/09/2013	28	Telephone	1	North Rhine-Westphalian Audit Commission
28/09/2013	29	Email	1	SOL Community Association
09/12/2013	30	Face-to-face	1	Newcastle City Council
08/05/2014	31	Face-to-face	1	Newcastle Science City
10/06/2014	32	Face-to-face	1	Climate North East
29/08/2014	33	Face-to-face	1	Newcastle Science City
13/05/2015	34	Email	1	Newcastle City Council
24/03/2016	35	Face-to-face	1	Newcastle City Council